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Appl. No. 09/990,189
Amdt. dated Apr. 23, 2004
Reply to Office Action of Dec. 23, 2003

Listing of Claims:

The below listing of claims will replace all prior versions, and listings, of claims in the application. Claims 1, 3-5, 8, 12-16, and 22-24 have been amended. Claims 2 and 7 have been canceled without prejudice. No new matter has been added.

Claim 1 (currently amended): A mold configured for use in preparing a portion of a golf ball from a ball material comprising a contact region, wherein the contact region is configured to contact the ball material during preparation of the portion, and wherein the contact region comprises porous metal having a porosity between about 5% and about 50% by volume.

Claim 2 (canceled).

Claim 3 (currently amended): A mold as defined in claim 2 1, wherein the porous metal has a porosity between about 5% and about 40% by volume.

Claim 4 (original): A mold as defined in claim 3, wherein the porous metal has a porosity between about 10% and about 30% by volume.

Claim 5 (original): A mold as defined in claim 1, wherein the porous metal comprises interconnected pores.

Claim 6 (original): A mold as defined in claim 5, wherein the interconnected pores have diameters between about 3 and about 10 microns.

Claim 7 (original): A mold as defined in claim 1, wherein the porous metal comprises aluminum.

Claim 8 (original): A mold as defined in claim 1, wherein the porous metal comprises a metal alloy.

Claim 9 (original): A mold as defined in claim 8, wherein the metal alloy is stainless steel.

Claim 10 (original): A mold as defined in claim 1, wherein the mold is configured to form the portion as a core, an intermediate layer, or a cover layer of a golf ball.

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Claim 11 (original): A mold as defined in claim 1, wherein the contact region of the mold comprises a plurality of mold sections that removably mate to define a generally spherical cavity.

Claim 12 (original): A mold as defined in claim 11, wherein the mold sections comprise porous metal.

Claim 13 (original): A mold as defined in claim 11, wherein the mold comprises a plurality of retractable support pins attached to the mold sections and projecting into the cavity to support an inner portion over which the portion is prepared, the support pins being retractable therefrom, the support pins comprising porous metal.

Claim 14 (original): A mold as defined in claim 11, wherein the mold region comprises a plurality of extendable ejector pins attached to the mold sections, the ejector pins configured to extend into the cavity, to eject the portion, the ejector pins comprising porous metal.

Claim 15 (original): A mold as defined in claim 11, wherein the mold region comprises a plurality of retractable vent pins attached to the mold sections, the vent pins configured to retract from the cavity to allow gases to exit the cavity, the vent pins comprising porous metal.

Claim 16 (original): A mold as defined in claim 1, wherein:
the contact region of the mold comprises a sprue, runner, or gates;
the sprue, runner, or gates are configured to route ball material to flow into the cavity;
and
5 the sprue, runner, or gates comprise porous metal.

Claim 17 (original): A mold as defined in claim 1, wherein the mold is configured for use in an injection molding process.

Claim 18 (original): A mold as defined in claim 1, wherein the mold is configured for use in a compression molding process.

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Claim 19 (original): A mold as defined in claim 1, wherein:

the contact region of the mold defines an interior space, in which the ball material is situated, and an exterior space; and

5 the mold further comprises a vacuum device configured to reduce the pressure in the exterior space to a value less than the pressure in the interior space.

Claim 20 (original): A mold as defined in claim 19, and further comprising a pressurizing device configured to increase the pressure in the exterior space to a value greater than the pressure in the interior space.

Claim 21 (original): A mold as defined in claim 1, wherein the contact region defines an interior space in which the ball material is situated and an exterior space, the mold further comprising a pressurizing device configured to increase the pressure in the exterior space to a value greater than the pressure in the interior space.

Claim 22 (original): A mold as defined in claim 1, wherein the porous metal has porosity sufficient to allow gases to escape through the porous metal.

Claim 23 (currently amended): A method for forming a portion of a golf ball, the method comprising:

5 preparing a mold configured for use in preparing a portion of a golf ball from a ball material, wherein the mold comprises porous metal and having a porosity between about 5% and about 50% by volume, wherein the mold has an exterior space having an exterior pressure and an interior space having an interior pressure, the mold further comprising a vacuum device configured to reduce the exterior pressure to a value less than the interior pressure;

10 using the vacuum device to reduce the exterior pressure below the interior pressure sufficient to increase flow of gas through the porous metal from the interior space to the exterior space; and

placing the ball material into the mold to form the portion so that gas flows from the interior space to the exterior space.

Claim 24 (currently amended). A method for forming a portion of a golf ball, the method comprising:

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preparing a mold configured for use in preparing a portion of a golf ball from a ball material, wherein the mold comprises porous metal and having a porosity between about 5% and
5 about 50% by volume, wherein the mold has an exterior space having an exterior pressure and an interior space having an interior pressure, the mold further comprising a pressurizing device configured to increase the exterior pressure to a value greater than the interior pressure;
placing the ball material into the mold to form the portion; and
using the pressurizing device to increase the exterior pressure above the interior pressure
10 to a value sufficient to improve release of the portion from the mold.